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HANDBOOK No. 22

Varied thrush.

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The Birds
OF BRITISH COLUMBIA
(8) Chickadees, Thrushes, Kinglets, Pipits, Waxwings, and Shrikes

By C. J. Guiguet
Illustrations by Frank L. Beebe

VICTORIA, B.C. MARCH, 1964

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Minister

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Deputy Minister

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Chickadees, Thrushes, Kinglets, Pipits, Waxwings, and Shrikes

INTRODUCTION

Representatives of six different families of birds are dealt with in this booklet. These include nine thrushes, five chickadees (including the bushtit), two kinglets, one pipit, two waxwings, and two shrikes.

Each kind of bird is illustrated by a drawing, and some distinctive characteristics in appearance, behaviour, and song are described, so that with a little experience one may come to know the various species.

I am deeply grateful to Dr. G. C. Carl and Mr. F. L. Beebe for advice and critical reading in the preparation of the manuscript for the handbook.

CHICKADEES

Chickadees are small birds, measuring about 5 inches long, with relatively long slender tails and small stubby bills. They are essentially grey, white, and black in colour and are extremely active little creatures, travelling in flocks, except during the nesting season. The flocks are often seen busily working through trees and bushes in search of insects, insect eggs, and larvæ. When so engaged, individuals are apt to be seen upside down, clinging to the end of a branch or twig, each twittering and calling as if communicating with the remainder of the flock. This behaviour and the fact that chickadees are the only birds with a combination of black cap, black bib, and white cheeks make them very easy to identify. Four species of chickadees and one species of bushtit, a small grey bird that belongs to the same family, occur in British Columbia.

Black-capped chickadee. Chestnut-backed Chickadee.

Black-capped Chickadee

Description

The black-capped chickadee measures 4¾ to 5¾ inches from bill tip to tail tip. It is a brightly coloured bird with jet-black throat and head, clear white cheeks, and a grey back and tail. The undersides are white, with a sandy suffusion along the flanks. In this species the colour pattern is clear cut, and the grey back in conjunction with the solid black cap is distinctive.

Range and Variation

The black-capped occupies a wide range in North America, where it has become differentiated into several subspecies, two of which occur in British Columbia. In this Province the interior east of the Coast Range is occupied throughout by a rather long-tailed black-cap often called the long-tailed chickadee. On the west side of the coastal mountains in the Puget Sound lowlands, we find a slightly darker subspecies with shorter wing and tail, which is commonly known as the Oregon chickadee. Both of these subspecies are easily recognized as black-capped chickadees, and the slight differences, while clearly seen in large series of skins, are of little consequence to the bird-watcher in the field.

Outside of the Province the black-cap ranges throughout the wooded and bushy parts of Alaska, the southern Yukon, southwestern Mackenzie, central Saskatchewan, and down through the east central United States. (A.O.U. Check-list, 1957.)

The black-capped chickadee usually frequents semi-open situations where deciduous growth prevails. In British Columbia, however, the species is often observed along the edges of coniferous forests. Second growth, following logging or fire, provides ideal habitat for this bird.

Nesting

Nesting-holes of this species are usually situated in dead and decaying trees where excavation by the birds themselves is possible. Apparently they use abandoned woodpecker nesting-sites to a lesser extent than do other chickadees. The nest is usually constructed of fine moss or other vegetable fibres, and it is invariably lined with the hair and fur of mammals. Eggs number from 5 to 10 and are white, spotted with fine reddish-brown dots. The period of incubation is 14 days, and two broods are raised annually.

Voice

In the spring of the year the black-capped chickadee utters a clear two-noted or three-noted whistle, the first note higher. It is expressed as "fee-bee," or "fee-bee-bee," by Peterson (1961). The most often heard call is "chick-adee-dee-dee," a distinctive call which readily identifies the bird.

Migration

The species is resident throughout its range.

Chestnut-backed Chickadee

Description

The chestnut-backed chickadee measures 4½ to 5¼ inches from bill to tail tip. It is easily distinguished from other chickadees in having a rufous-coloured back. The characteristic dark cap, black bib, and white cheek patches of the group separate it immediately from other birds.

Range and Variation

This species is a wet belt form confined in British Columbia to the area west of the Coast Range and to the wet Columbian Forest of the interior. It also occupies the smaller coastal islands, Vancouver Island, and the Queen Charlotte Islands. It ascends some of the valleys of the larger river systems for considerable distances into the interior. Outside the Province it is found along the coast from Alaska to south central California and inland to south-eastern Washington, northern Idaho, and north-western Montana. (A.O.U. Check-list, 1957.)

In this Province it is a bird of the coast forest, but is often observed where deciduous growth is present as well. It frequents treed areas within village, town, and city, particularly in coastal areas, where it is a favorite " backyard bird " with bird-lovers.

Three subspecies are described for the range, one of which occurs in northern areas including British Columbia. The other two subspecies occur at the southern end of the range.

Voice

" The chestnut-backed chickadee seems to have a great variety of notes, perhaps of conversational value, most of which bear little resemblance to the ' chick-a-dee ' note of the black cap, though Dawson (1923) says this becomes ' Kissadee,' and Taylor and Shaw (1927) say that ' when scolding us at short range they interjected numerous fine ' tseek-a-dee-dees ' into their conversation ' " (Bent, 1946). Peterson (1961) interprets the chestnut-backed chickadee's call as " tsick-i-see-see " or " zhee-che-che," also a harsh " zee or zze-zze." This species has no whistled song.

Nesting

The chestnut-backed chickadee often excavates its own burrow in punky trees, both coniferous and deciduous, and at varying heights from the ground. Suitably placed boxes will attract it to nest in the yard if the opening is small enough to eliminate the house sparrow. The bulk of the nest is composed of mosses or other available material, lined with mammal fur or bird feathers. Eggs number from 5 to 9; they are white, finely marked with reddish-brown spots. The period of incubation is probably 12 to 14 days, and as many as three broods may be raised annually. Young resemble the parents but, like other chickadees, are less distinctly marked and have more fluffy plumage.

Food

This chickadee is largely insectivorous, but it will also eat a small percentage of fruit pulp and seeds, usually those of coniferous trees. The chestnut-backed chickadee comes readily to feeding-trays, where it eats suet with evident relish.

Migration

This is a resident species with little or no migratory tendencies in the coastal areas. There is some evidence of migratory movements in populations of the interior.

Boreal Chickadee. Mountain Chickadee.

BOREAL CHICKADEE

Description

The boreal chickadee measures 5 to 5½ inches from bill to tail. The dark cap is brown rather than black, the cheek patches are duskier than in other species of chickadees, and the back is brown rather than grey or rufous.

This combination of features serves to separate the boreal chickadee from all others. After observing other chickadees in the wild, this bird appears dull by contrast.

This species has been known as Columbian chickadee, Hudsonian chickadee, and brown-headed chickadee. The most recent A.O.U. Check-list (1957) lists the common name as boreal chickadee, and we follow that authority.

Range and Variation

The boreal chickadee occupies a wide northern range extending across " northern North America from the northern limit of wooded country through continental Alaska, south to central northern Washington, northwestern Montana, central Saskatchewan, central Manitoba, northeastern Minnesota, northern Michigan, central Ontario, northeastern New York, northern Vermont, northern New

Hampshire, Maine, and Nova Scotia. Casually farther south in winter." (A.O.U. Check-list, 1957.)

In British Columbia the species is found in the interior of the Province east of the Coast Range in subalpine regions and in the boreal forest. Two of the five recognized subspecies occur in British Columbia. The northern race occupies practically all of the habitat in the Province, while a poorly represented more southern race penetrates from north central Washington State into the western side of the Okanagan Valley.

The boreal chickadee is a bird of the coniferous forest, particularly during the summer months. In winter, altitudinal and some latitudinal migrations have been observed. These northern and high-country birds may then be seen in valley-bottoms, where more deciduous and mixed cover prevail.

Voice

The call of the boreal chickadee is not so sharp and clear as is the black-cap's " chick-adee-dee-dee." It is huskier, more nasal, and has been expressed variously as " chick-a-deer-deer," " aster-day-day-day," " tchid-chee-day-day," and " chick-che-day-day."

Brewster (Bent, 1946) states " another note frequently heard is a sharp chip, chee-chee-chee sometimes preluded by a sharp ' che-chit or chee-chit-chit.' "

A sweet warbling song of three or four notes is also attributed to the boreal chickadee. " It was a low, bubbling, warbling song which I vainly attempted to describe in my notes " (Allen, in Bent, 1946). Several other writers have described this warbling song, said to be unlike that of any other chickadee, but many competent observers have never heard the boreal chickadee utter anything but call notes.

Nesting

The nest of this species is much like that of other chickadees, being situated in a hole in a tree usually close to the ground. It is composed of sphagnum moss, lichens, and the fur of mammals, usually that of the varying hare. Eggs number from 4 to 9; they are white, speckled with fine reddish-brown dots. The period of

incubation is probably similar to that of other chickadees, 14 days. Juvenile plumage is attained about 14 to 18 days after hatching, at which time the young leave the nest to forage with the parent birds. Young resemble adults, but the colours are duller and the plumage more fluffy. Probably two broods are raised annually.

Food

Like other chickadees, this species is insectivorous. Being essentially a bird of the northern coniferous forests, it feeds upon insects within that association. Since many of these insects are injurious to trees, the boreal chickadee is regarded as a highly beneficial species.

Migration

The boreal chickadee is resident over most of its range. During severe winter conditions it migrates southward and to lower elevations.

Mountain Chickadee

Description

The mountain chickadee measures 5 to 5¾ inches from bill to tail tip. It resembles the black-capped chickadee, but the black cap is broken by a white stripe over the eye. As this is the only chickadee (*see* black-capped chickadee) in British Columbia with such a marking, it is easily identified.

Range and Variation

This species is "resident in the Rocky Mountains, Sierra Nevada, and on the inner coast ranges from northwestern British Columbia and southwestern Alberta to northern Baja California, central and northeastern Arizona, central and southeastern New Mexico and southwestern Texas." (A.O.U. Check-list, 1957.)

Over this range six subspecies of the mountain chickadee are recognized; only one of these is found in British Columbia. In this Province it occurs mainly in high semi-open coniferous habitat in the subalpine regions and dry forests of the southern interior; it is absent from the west side of the coastal mountains. The species is well named, for during the summer months most mountain chickadees are found at altitudes of from 6,000 to 11,000 feet.

Voice

The song is similar to that of the black-capped, but huskier. The spring song is described by Peterson (1961) as "three high clear whistled notes Fee-bee-bee, first note highest, second two on the same pitch and more distinctly separated than in call of black-capped chickadee." The huskier "chickadee" notes are expressed as "chuck-a-zee-zee-zee."

Nesting

Abandoned woodpecker holes or natural cavities in trees are usually utilized as nesting-sites by the mountain chickadee. Nests are most often within 15 feet of the ground, but some have been recorded as low as 2 feet and as high as 80. Nests are made up of mosses lined with hair and fur of mammals. Eggs number 6 to 12, usually 9 or more. They vary greatly in colour; some are pure

white, others faintly marked with reddish-brown spots; still others are quite brightly marked with reddish blotches and dots. The period of incubation is probably about 14 days. The young develop rapidly, and two broods may be raised annually. Juveniles resemble adults but are duller in colour and less clearly marked.

Adult birds are quite aggressive around the nest, as are other species of chickadees. Hissing and wing-fluttering behaviour intended to intimidate the intruder, seem out of place in so tiny a bird.

Food

As with other chickadees, this species is almost entirely insectivorous, feeding largely upon insects and spiders of all sorts during the summer months and gleaning the eggs and larvæ in winter.

Migration

The mountain chickadee is resident over its range, except for altitudinal migrations during the winter months. It then resorts to a more benign climate at lower elevations.

COMMON BUSHTIT

Description

The bushtit measures 3¼ to 4¼ inches from bill to tail tip. The bill is stubby; the body is small and the tail is relatively long. Apart from the hummingbirds, this is the smallest bird occurring in British Columbia. In colour it is a smoky grey on the upper parts, lighter below, and without distinct markings. It behaves in typical chickadee fashion, clinging upside down to feed, searching every crevice, and coming readily to suet at bird-feeding stations. In winter it often travels in large flocks.

Range and Variation

The species is resident from extreme south-western British Columbia, south along the coast ranges to southern Baja California; in the interior it is found from southern and south-eastern Oregon, south-western Idaho, north central Utah, western Colorado, westernmost Oklahoma, and northern and central Texas south to Sonora (A.O.U. Check-list, 1957). Over this range seven subspecies are recognized, one of which occurs in British Columbia. In this Province the bushtit is confined to the lower mainland and to Vancouver Island. It was unknown on Vancouver Island prior to the mid-1940's (Munro and Cowan, 1947), but has since

become well represented on the south-eastern coast. It frequents semi-open brushy environments, such as provided by Garry oak, ocean spray, and other deciduous stands.

Voice

Its song is described by Peterson (1961) as "insistent light 'tsits,' 'lisps' and 'clenks.'"

Nesting

The nest of the bushtit is a long pouch composed largely of mosses and lichens finely interwoven with spider web, oak leaves, and whatever the surrounding cover provides. The entrance hole is at the top and usually to one side. Most nests measure from 7 to 12 inches in length, but some to 21 inches have been recorded. The structure hangs from a limb (often ocean spray), and is sometimes difficult to see because it is so well camouflaged.

The eggs, small and white with little or no gloss, number from 5 to 7. The period of incubation is 12 days, young hatching on the 13th (Bent, 1946). After 14 or 15 days the young leave the nest and are soon thereafter foraging with their parents. It is believed that two broods may be raised in one season.

Juvenile plumage is similar to adult plumage but somewhat lighter in colour and more fluffy.

Food

Stomach analyses of 353 specimens from California (Bent, 1946) indicate that 81 per cent of the food of the bushtit is comprised of insects, insect larvæ, and spiders. The 19-per-cent vegetable food was made up of a variety of seeds, with a minimum of small-fruit pulp.

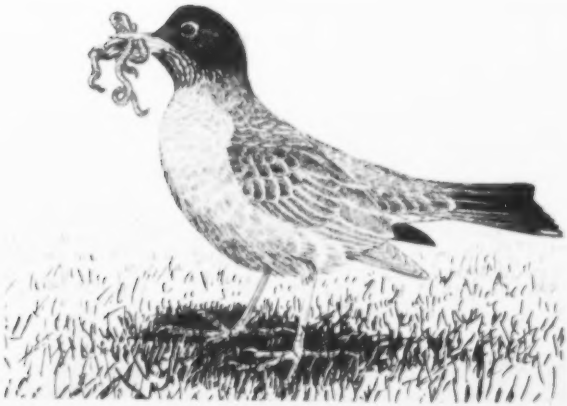
Many of the insects and insect larvæ taken by this bird are almost microscopic, although larger insects, such as beetles and caterpillars, are taken as well. In foraging for these minute insects, the bushtit is often seen in large flocks. Twenty or thirty individuals to the flock are not uncommon, and occasionally as many as 70 or 80 may be seen.

Migration

The bushtit is resident over all of its range.

THRUSHES

The nine species of thrushes known to occur in British Columbia vary greatly in appearance and in behaviour. Some, like the bluebirds and the varied thrush, are strikingly coloured, while others like the Townsend solitaire and Swainson thrush are conservatively coloured and marked. Many members of the thrush family are ground-loving, but the species living in British Columbia habitually frequent trees as well. Most thrushes are excellent singers, while some are mediocre in this respect. Thus, for the purposes of this booklet, it is difficult to give a simple definition that will cover adequately all of the members of the thrush family. In common, all thrushes have spotted young, which helps little in identifying adults. They also have in common a "booted" tarsus; that is, the upper part of the foot has a large scale rather than a series of smaller ones. This, too, is difficult to use in field identification as it requires very close observation to be seen. A minute notch near the tip and on each side at the lower edge of the mandible is also difficult to see unless the bird is in hand. Nevertheless, the thrushes are easily identified by voice, behaviour, and appearance.



AMERICAN ROBIN

Description

The robin, largest of the thrushes occurring in British Columbia, is so well known that it requires little description. It measures from 9 to 11 inches long, and the body is chunky rather than slender.

In general it is greyish-brown above, darkening to black on head and tail. Below, the throat is streaked in black over white, while breast and flanks are of a dull reddish colour. The sexes are coloured much alike, females being somewhat duller. Young have pale-coloured breasts heavily spotted in black.

Range and Variation

The robin is found in a variety of habitats throughout North America. The fifth A.O.U. Check-list (1957) cites its range as "from the limit of trees in northern Alaska, northern Canada, and Newfoundland south to southern Mexico and the shores of the Gulf of Mexico. In winter to southern Baja California, Guatemala, and southern Florida."

During the summer this bird is found almost everywhere in British Columbia and in every habitat wherein food and nesting sites are available. It frequents remote coastal islands, clearings

in the dense coastal forests, villages, cities, orchards, and farms. It is a common bird along the timber-line as well as in alpine areas. In winter the robin migrates from most of its range in British Columbia, but many remain in the southern coastal areas.

Three of the five recognized subspecies or geographical races of American robin occur in British Columbia. These are so much alike that we shall not enlarge upon the slight differences here. It is sufficient to say there is a coastal race which breeds west of the Coast Range, a northern form which breeds from about the latitude of Prince George northward, and a southern race from Williams Lake south. Wherever the ranges meet, there is interbreeding.

Voice

The song of the robin is a harbinger of spring to most people, though some find it monotonous. The song has been studied in some detail by many workers. Such things as note variation, hours rendered, numbers of times rendered, and so on have been recorded. The song, a long series of short phrases uttered in a rising and falling sequence, is most often heard in the early morning and late evening. A wide range of call notes, alarm notes, squeaks, and sibilant sounds are rendered as well.

Nesting

The nest is usually placed at varying heights in the crotch of a tree or shrub, under eaves, on rafters in buildings, and in other suitable situations. The outer shell of the nest is built of fine sticks and coarse grasses with a mud liner; the interior is lined with fine grasses, horse hair, and the like.

Usually 4 or 5 blue eggs are laid in April, hatching after 17 days of incubation. The young grow rapidly. The breast, heavily spotted, varies from greyish to orange in colour as the birds develop. Two or three broods are raised each season when conditions are favourable.

Food

The robin eats seeds, berries, insects, worms, and similar items. It takes readily to feeding-trays for bread crumbs, suet, and seeds,

and is sometimes destructive to commercial crops such as strawberries and cherries.

Migration

Robins nest north to the tree limit. They migrate south as far as Florida and Baja California. Many winter in northern temperate areas, such as the lower mainland and southern Vancouver Island. In these temperate areas, robins occur the year around. No doubt some of these are permanent residents, while others are migrants.

VARIED THRUSH

Description

The varied thrush is similar in size, shape, and general appearance to the robin. It is a chunky bird, measuring from 9 to 10 inches from bill tip to tail tip, and it has an orange-coloured breast. Here the resemblance ends, for there is a dark band across the breast of the varied thrush. In addition, there is an orange stripe through the eye and orange bars on the wing, which robins do not have. The adult male thrush is bluish on the upper parts, while the robin is brown. Females and first-year birds are not so distinctly marked and are brownish rather than blue on the back. Immature birds are spotted, as are all young thrushes.

Range and Variation

This is a bird of the West, rarely occurring east of the Rocky Mountains. Its range extends from central Alaska, the Yukon, and Mackenzie, south through British Columbia and the western United States. It nests from north-western California to the northern extremities of its range, favouring high country in the southern areas. (A.O.U. Check-list, 1957.)

The varied thrush frequents woods. One may see it in the mature coniferous forests of the coast and interior, in alder bottoms,

and in older second-growth stands. During cold periods it often appears in the shelter of hedge rows and brush within city limits, where it takes to feeding-trays, and where it forages in the open more than it does normally. Usually, however, it is shy and retiring and is seldom seen by the noisy traveller.

Two subspecies occur—one in the interior of the Province and one on the coast. These are very similar in appearance, although the coastal birds tend to be darker than those of the interior.

Voice

The call is a single long penetrating quavering note uttered in different keys, followed by a shorter note or by several notes usually on a lower pitch. There is no sustained song.

Nesting

This bird nests in the forest, sometimes high up in the conifers, but most often lower down in smaller trees or large underbrush. The nest is often exposed and is easily found. It measures about 7 or 8 inches in diameter. The outer shell is usually composed of small sticks, coarse grasses, shredded bark, and mosses; the lining is of fine grasses and shredded bark.

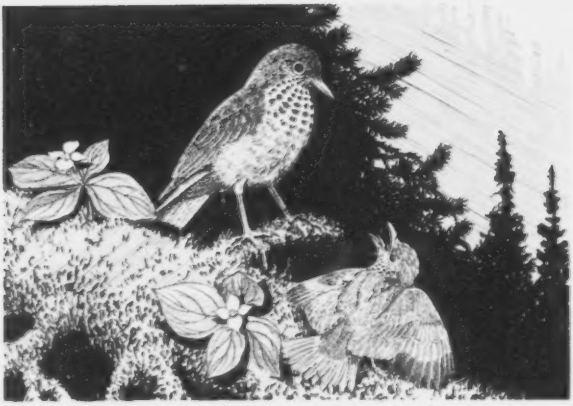
Eggs number 3 to 5 and are pale blue in colour, finely speckled with dark-brown spots. Incubation is probably of about two weeks' duration. The young grow rapidly, and often two broods are raised each season.

Food

The varied thrush is a ground feeder; stomach analyses indicate it eats a variety of food, made up of many species of insects plus small wild fruits and seeds such as honeysuckle, blackberry, juniper, arbutus, and acorns.

Migration

Over most of the range the varied thrush is resident, although there are local movements during severe winter conditions. In some parts of the range there are altitudinal migrations, the birds wintering in the lowlands and nesting higher in the mountains.



HERMIT THRUSH

Description

The hermit thrush measures 6½ to 7¾ inches from bill to end of tail. The upper parts, except for the tail, are olivaceous brown in colour. The tail is decidedly more red than is the back, a feature which distinguishes this species from any other thrush.

The bird is white below, the breast heavily spotted with dark markings. When at rest the hermit thrush has a habit of cocking and slowly lowering the tail. This is a good point to remember in field identification.

Range and Variation

In summer the hermit thrush is found north to central Alaska, southern Yukon, southern Mackenzie, north-western Saskatchewan, southern Manitoba, northern Ontario, central Quebec, southern Labrador and Newfoundland, and south to southern California, northern New Mexico, central Wisconsin and Maryland. It winters south to Guatemala, the Gulf of Mexico, and southern Florida. (A.O.U. Check-list, 1957.) Eight subspecies or geographic races are recognized, four of which occur in British Columbia. The differences in appearance of these races are slight and of little interest to the average reader.

In British Columbia, coastal hermit thrushes are generally darker than are those inhabiting the interior. However, as all races have the reddish-coloured tail, there should be little difficulty in identifying a hermit thrush anywhere in the Province.

This thrush is a shy woodland bird frequenting the margins of coniferous and deciduous growth alike. It is remarkably well camouflaged, so that it merges into the shadowy habitat in which it lives.

Voice

The song of the hermit thrush is considered by many to be superior to the songs of other birds. Chapters have been written describing the beauty, clarity, and rendition of the hermit thrush's song. Peterson (1961) has condensed the description as "clear, ethereal and flutelike; three or four phrases on different pitch levels, each introduced by a long introductory note; a deliberate pause between each phrase." The alarm note is best described as a low whistled "quoit." One may often call hermit thrushes up to very close viewing range by imitating this note. Other notes include a harsh "pay" and a scolding "tuk-tuk-tuk" (Peterson, 1961).

Nesting

The nest of the hermit thrush is most often situated from 3 to 6 feet above the ground in the crotch of a tree or on top or at the base of a stump. The outer portion usually contains a good deal of moss and lichens; the inner bowl is lined with rootlets, grass, and leaves. The eggs, which number from 3 to 5, are Nile blue in colour and without markings. The period of incubation is probably 12 to 14 days. Young develop rapidly, and two broods are raised annually, except in the northern portions of the breeding range, where one brood is the rule.

Food

Like other thrushes, this species is largely insectivorous, eating a wide variety of caterpillars, moths, flies, and similar insects. In coastal British Columbia large numbers of migrating hermit and

Swainson thrushes have been seen on sandy sea beaches foraging for a small marine crustacean commonly known as the " sand flea." In the logging slash, termites and sow bugs are taken. The insectivorous diet is supplemented later in the season by small wild fruits.

Migration

Most of the hermit thrushes leave the Province in the fall. However, small numbers of coastal birds are known to winter at the south end of Vancouver Island.

SWAINSON THRUSH

Description

The Swainson thrush measures from 6½ to 7¾ inches from bill to tail tip. The sexes are coloured alike. Both are an olive-brown above, pearly white below, and have spotted breasts. A conspicuous buffy eye ring and a buffy cheek patch distinguish this species from three other thrushes with which it may be confused. These, the gray-cheeked thrush, hermit thrush, and veery, also have spotted breasts, but differ in other respects as well as those mentioned above. The differences are listed under the description of these species.

Range and Variation

The Swainson thrush nests across the continent north through the boreal forest regions and southward to California, Nevada, Arizona, and New Mexico. It migrates to winter in Mexico, Central America, and northern South America. (A.O.U. Check-list, 1957.)

It occurs as four geographic races, three of which are found in British Columbia. There is a richly coloured race (formerly called russet-backed thrush) occupying the breeding areas west of the

Cascade and Coast Ranges. A more olive-coloured race (formerly known as the olive-backed thrush) occurs in the central regions of the interior, and a northern race (also olive-backed) breeds from north-central British Columbia northward into central Alaska, the Yukon, and Mackenzie.

In the southern part of the range the Swainson thrush frequents willow thickets and other deciduous woodlands. In the north, including British Columbia, it is found as well along the margins of the coniferous forests.

Like other small woodland thrushes, this is a secretive bird, sometimes difficult to observe. It blends well with its surroundings and usually remains within the cover. Occasionally during migration along the coast it is seen in very large numbers with hermit thrushes, on the open beaches, feeding on small marine crustacea. As in the case of the hermit thrush, it is most easily observed by " calling up " with an imitation of the alarm note described below.

Voice

This species is highly rated as a songbird, having all of the ethereal qualities of voice attributed to the hermit thrush and the veery. Peterson (1961) describes the song as " melodious, breezy flute-like phrases; distinguished from other thrushes by a tendency of each phrase to climb upwards." The alarm note is similar to that of the hermit thrush, and in fact both species will respond and often come to the same whistled " quoit." As with other songbirds, the greatest singing activity is in the early morning during the nesting period. There is a period of activity as well just before dusk. Sometimes, during dull overcast periods, the song may be heard throughout the day.

Nesting

Nests are of the conventional bowl type, composed mainly of small twigs, ferns, and mosses lined with fine dry grass. They are situated close to the ground, in the crotch of a tree or shrub, near to the trunk. Although usually within 4 or 5 feet of the ground, some nests have been recorded as low as 6 inches, others as high as 60 feet. Eggs, numbering from 3 to 5, are pale blue in colour and finely marked with brownish flecks.

The period of incubation is said to be 14 days, with young leaving the nest 14 days after hatching. It is likely that two broods are raised annually.

Food

In British Columbia the Swainson thrush feeds largely upon insects and their larvæ, with small fruits and seeds supplementing the diet when such are available. In coastal areas the small marine crustacean commonly termed " sand flea " is utilized.

Farther south, in the San Francisco region, Beal (Bent, 1949) examined 157 Swainson thrush stomachs taken between April and November. These examinations revealed 52 per cent animal food and 48 per cent vegetable food, much of the latter being small fruits such as cherries, raspberries, and twinberries. In September 80 per cent of the diet was made up of small fruits, indicating again that availability is a major factor in determining diet with these small thrushes.

Migration

In the fall, Swainson thrushes follow conventional north-south migration routes with almost complete exodus from breeding ranges in British Columbia.

GRAY-CHEEKED THRUSH

Description

The gray-cheeked thrush resembles the Swainson thrush in size and general appearance. It differs mainly in being more grey in colour and in having grey rather than the buff-coloured cheek patches and eye rings. The lack of rufous colouring on back and tail distinguishes this bird from the hermit and the western race of the Swainson (russet-backed) thrush. It is less easily separated from the eastern Swainson (olive-backed) thrush, in which there is little or no russet coloration. In this case the grey rather than buffy eye rings and cheek patches are the characteristics to look for.

Range and Variation

Two subspecies of gray-cheeked thrush occur in North America. The eastern form nests through the Atlantic States east of the Mississippi River and north to northern Quebec. It migrates to winter in South America.

The subspecies occurring in British Columbia has a wide northern distribution. It nests across the continent from Labrador to extreme northern British Columbia, northern Alaska, and into eastern Siberia. In migration the birds funnel down the Mississippi

drainage, thence to the wintering-grounds in the Caribbean and South America, largely by-passing British Columbia. So far there are no coastal records at all for the Province, although we should expect stragglers in migration. There are a few records from northern British Columbia, including one nesting in the Haines Road area (the extreme north-western section of the Province). More field research in the northern reaches may reveal a larger population of gray-checked thrushes in British Columbia than present records indicate.

Voice

The song of this bird is said by many to be inferior to that of some of the other members of this family of songsters. Other writers describe it as beautiful and compare it favourably with any bird song. Bent (1949) suggests that this bird does not sing in full until it is on the remote nesting-grounds, and that consequently few people have had the privilege of hearing it. The song is said to commence with a slurring "wee-oh - - -" followed by two, sometimes three, high-pitched, staccato notes resembling "cheechee," intermingled with almost inaudible cymbal-like tones. Peterson (1961) describes the song as thin and nasal, resembling that of the veery, but that it often rises abruptly at the close, whereas the veery's goes down—"whee-wheeoo-tile-whee."

Nesting

The nest is built of grass, coarser on the outside, and incorporated with mud. The inner lining is of fine grasses. Nests may be situated on or near the ground among roots of trees or in a crotch 20 feet up, depending upon the nature of the cover. Most are placed about 6 feet above the ground. The nest measures some 4 inches in diameter and about 2¾ inches deep over all. (Bent, 1949.)

The eggs, 3 to 6 in number, are pale blue and usually speckled with fine reddish-brown spots. The period of incubation is probably similar to that of the Swainson thrush, about 14 days.

Food

Professor Beal, quoted in Bent (1949), examined the stomachs of 111 gray-cheeked thrushes. He found that approximately 75

per cent of the contents consisted of animal matter and about 25 per cent vegetable food. Beetles made up a large part of the former, with a variety of other insects included. The vegetable food consisted of 18 different species of wild fruits. Food of migrating species will, of course, vary greatly from area to area. Thrushes wintering in Peru or British Guiana will subsist on different species of insects and plants than will those nesting along the Arctic shores of Alaska. Basically, however, these birds are insectivorous, supplementing their diet with fruits as opportunity permits.

Migration

The gray-cheeked thrush is said to migrate farther and faster than do other North American thrushes. To quote Lincoln (Bent, 1949): "An excellent example of rapid migration is that of the gray-cheeked thrush. This bird winters in Colombia, Ecuador, Peru, Venezuela and British Guiana and does not start its northward journey until many other species are well on the way. It does not appear in the United States until the last of April—April 25 near the mouth of the Mississippi and April 30 in northern Florida. A month later, or by the last week in May, it is to be seen in northwestern Alaska, the four thousand mile trip from Louisiana having been made at an average speed of one hundred and thirty miles a day."

VEERY

Description

The veery (sometimes called willow thrush) measures 6½ to 7¾ inches from bill tip to tail tip. It closely resembles the Swainson thrush but differs in being a "uniform warm brown" rather than an olive colour on the upper parts. It has a less conspicuous eye ring, and is less spotted on the breast than is the Swainson thrush. The song, described below, is distinctive and is perhaps the best initial recognition feature.

Geographic location and habitat, also described below, are useful in identification as the veery has a rather limited range in British Columbia.

Range and Variation

This species has a wide continental breeding range which extends from south-eastern and central British Columbia, eastward across central and southern Canada to central Newfoundland, and in the east southward along the Alleghenies to northern Georgia. Farther west in the United States it extends southward to north-eastern Minnesota and South Dakota and from British Columbia south through the Rocky Mountains to north-eastern Arizona. It

winters from Central America south through the north-eastern part of South America. (A.O.U. Check-list, 1957.)

In British Columbia the veery is found mainly in damp, wooded river-bottoms in the south-eastern sections of the Province. It occurs sporadically in similar habitat in the Cariboo parklands north to Quesnel and as far west as the heads of the longer coastal inlets (Dean Channel and Burke Channel). (Munro & Cowan, 1947.) There is a south-western record from Lillooet.

Three subspecies are recognized, two of which occur in the extreme eastern parts of the continental range. The western form occupies a range extending in Canada from southern Ontario to south-central British Columbia.

Voice

Peterson (1961) describes the song as "liquid, breezy, ethereal; wheeling downward: Vee-ur, vee-ur, veer, veer," and the note as "vew" or "phew."

In Bent (1949) the quotations of several observers seem to indicate that there is a good deal of individual variation in the veery's song. Some writers believe the song to be inferior to that of other thrushes, while some again praise it highly. In my opinion it compares favourably to the songs of Swainson and hermit thrushes; all three are aptly described as being "ethereal" in quality.

Nesting

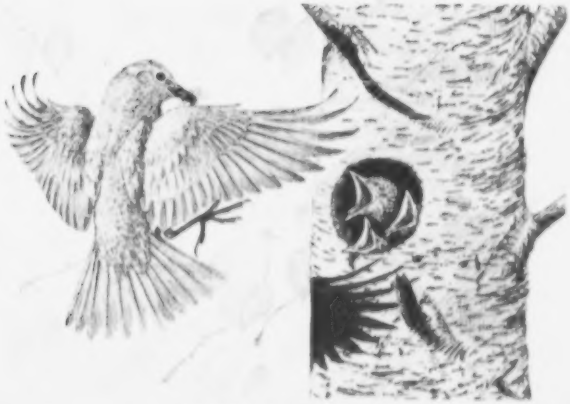
The nest of the veery is usually built on or near the ground in damp situations. For this reason a large mass of leaves and other vegetation often forms a raised base, sometimes 10 inches thick, upon which the inner nest is built. The nest proper measures only about 2½ inches in diameter and is lined usually with soft shredded bark and dried leaves. From 3 to 5 pale-blue eggs make up the clutch. These are usually without markings, although rarely brown speckles may be present. The period of incubation is 10 to 12 days, and the young develop rapidly, as do most birds of this kind. Burns, quoted in Bent (1949), states that the young of the veery leave the nest 10 days after hatching.

Food

The food of the veery, like that of other thrushes, is made up mainly of insects, with small wild fruits supplementing the diet in late summer and fall. Although it feeds on the ground, with the springy hop characteristic of this group of thrushes, it is also known to take insects on the wing in the manner of flycatchers and in branch feeding through low shrubbery.

Migration

The veery leaves North America in the fall to winter in northeastern South America.



MOUNTAIN BLUEBIRD

Description

The mountain bluebird measures 6½ to 7¾ inches from bill to tail tip. The adult male is a bright turquoise blue above, paler blue to whitish below; the bill and feet are black. The adult female is greyish-brown, with blue on rump, wings, and tail. Young birds are grey, marked with paler streaks and feather margins; young males are bluish on rump, wing, and tail.

The vividly coloured male can be mistaken for no other bird. Females are sometimes confused with the Townsend solitaire, but the lack of white on the outer tail feathers and the bluish markings should minimize such error.

Range and Variation

This species occurs throughout the Province during the summer months and sometimes winters in small numbers in the southern interior and southern coastal regions. In British Columbia it is much more common in the interior than on the coast. The mountain bluebird is found mainly in semi-open habitats, such as parklands, subalpine areas, and early second-growth forest. In villages and towns it nests in eaves, nesting-boxes, and other niches afforded by man's dwellings.

Throughout the range there is no apparent geographical variation in the mountain bluebird. It occurs in the same form from central Alaska and the southern Yukon, south through the Great Plains and western mountains into California, Kansas, Oklahoma, and Texas. (A.O.U. Check-list, 1957.)

Voice

The bird has a subdued song, somewhat resembling that of the robin, but with much less volume. Singing is confined to the very early hours, often before daylight. The most often heard note is a low churring sound.

Nesting

The mountain bluebird nests in all manner of cavities in trees, rock, and soil. Old woodpecker holes, man-made nesting-boxes, and recesses excavated in the punky wood of dead trees are the favoured sites in British Columbia. Nests are usually located a few feet above the ground, but some have been recorded as high as 30 feet. The nest may be lined with a variety of materials, such as shredded bark, feathers, plant stems, and dried grasses.

Eggs number from 4 to 8. They are pale blue in colour and lack markings of any sort. Incubation requires 14 days, the young developing rapidly after hatching. In southern parts of the range three broods may be raised annually; in northern parts, only one or two.

Food

Professor Beal (Bent, 1949) reports 91.62 per cent animal matter (insects) to 8.38 per cent vegetable matter (small fruits) in the stomachs of 66 mountain bluebirds examined. Apparently this bird takes whatever the season provides in the insect line. It often takes flying insects in the manner of the flycatchers. Vegetable food is taken in the fall and early winter when insect life declines and small fruits are more readily available.

Migration

In the fall, high country and northern nesters migrate to more benign wintering areas. As previously stated, the species winters from extreme southern British Columbia southwards.

WESTERN BLUEBIRD

Description

The western bluebird measures 6½ to 7 inches from bill to tail tip. The head, most of the back, tail, and wings are of a deep intense blue. The breast and flanks are dull red in colour, and the upper part of the back has a dull reddish band which is complete in some individuals, but almost lacking in others. The lower abdomen is white. The bill and feet are black. Females are somewhat similarly marked but very much duller in colour. Young are brownish, streaked, and with light feather margins and spots giving a mottled effect. Wings and tail are blue, not so intense as in adults. In young birds, males are brighter in hue than females.

Range and Variation

This species ranges from "southern British Columbia and central Montana, south through the mountains to northern Baja California, Michoacan, Puebla, and central Veracruz" (A.O.U. Check-list, 1957). Thus it is confined to the extreme western part of North America. It occurs as two subspecies. A southern form breeds from the southern extremities of the range north to southern Nevada, central Utah, Colorado, and western Texas. A northern

form occupies the remainder of the species range, north into British Columbia.

The western bluebird is found in semi-open parkland-type habitats, farmsteads, orchards, open slash, and in subalpine regions. Along the southern coast it often frequents open beaches, particularly during the winter months. It is generally confined to the southern extremities of the Province in summer and winter.

Voice

Like the mountain bluebird, this species confines its singing to the pre-dawn hours, usually while darkness still prevails. The song is described as similar to that of the robin, but, as with the mountain bluebird, much subdued and difficult to hear at any distance. The note most often heard is similar to that of the mountain bluebird and is described as a low " tew " or " few."

Nesting

The nesting habits of this species are similar to those of the mountain bluebird. It nests in cavities, usually in trees and stumps, but takes readily to nest boxes and eaves of buildings. Eggs number 4 to 8; they are pale blue in colour and are indistinguishable from those of the mountain bluebird. Period of incubation is 14 days; young develop rapidly, and usually two or three broods are raised annually.

Food

The western bluebird, like the mountain bluebird, is highly insectivorous. Of 217 stomachs analysed by Professor Beal (Bent, 1949), 81.94 per cent of the contents was made up of animal matter (insects), the remaining 18.06 per cent of vegetable matter (small fruits). As with other species of thrushes, availability of food is often the factor determining what this bird eats. If small fruits are more plentiful and easily secured than are insects in a given area, it is likely that the former will make up a large part of the diet. However, it may be argued that when such conditions prevail, truly insectivorous birds, such as the western bluebird, simply move out.

Migration

The western bluebird leaves the northern extremities of its range in the fall. Apart from altitudinal migration, it is sedentary in the southern areas. Small numbers winter on the lower mainland, at the south end of Vancouver Island, and occasionally in the southern interior of the Province.

TOWNSEND SOLITAIRE

Description

The Townsend solitaire is somewhat smaller and decidedly more slender than is the robin. It measures 8 to 9½ inches from bill to tail tip. Adults are predominantly grey in body colour, but with white eye rings, buffy wing markings, and white on the outer sides of the tail. Male and female are coloured alike. Young are heavily marked with pale spots.

Range and Variation

The Townsend solitaire is a western bird, breeding from northern Alaska and the southern Yukon south through British Columbia, western Alberta, and the western United States to northern Mexico. It winters from southern British Columbia south to the extremities of its range. Throughout this range the Townsend solitaire occurs in one form only. So far no geographic race has been described for this species.

In British Columbia the solitaire favours a variety of habitats during the summer, often in the high alpine and subalpine regions. In winter one finds it in semi-open situations along the southern coast. It is known to withstand severe winter conditions so long as food is available.

Voice

The Townsend solitaire is a fine songster. Bent (1949) describes the song as a "rather prolonged, warble-like series of rapid notes, each note on a different pitch than the last. The notes are clear, sweet, and loud, and follow each other almost as rapidly as those of the winter wren." Peterson (1961) describes the alarm note as "a sharp eek." Some claim that the song of this bird is almost identical to that of the purple finch.

Nesting

The solitaire usually nests on the ground along cut-banks, on cliffs, at the base of stumps, and in other situations where an overhang provides top cover. The nest varies in bulk with the size of the cavity in which it is placed. On the average it measures about 4½ to 5 inches in diameter and is constructed of various materials. Twigs, pine needles, coarse grasses, and such items form the cup, which is most often carelessly assembled, with bits and pieces straggling out. Sometimes no nest material at all is used, the eggs being laid in the dry dust of a bowl excavated in the earth.

Eggs number 3 to 5 and vary in colour from dull white, pale yellow, to pale blue or green, spotted, scrawled, or blotched in various shades of brown and reddish-brown. The period of incubation is probably about two weeks in duration. Two broods are known to have been raised in one season.

Food

Like other thrushes, this species subsists largely upon insects and small fruits and seeds. It sometimes takes flying insects in the manner of the flycatchers, darting off some point of vantage, securing the insect, and returning to perch. Caterpillars, beetles, flies, moths, rose seeds, blackberries, arbutus berries, and similar items make up a large part of the diet of this species.

Migration

The Townsend solitaire appears to be resident in most parts of its range from southern British Columbia southward.

KINGLETS

Kinglets are small, active greenish-coloured birds with small straight bills and short tails. They tend to frequent trees and shrubbery more so than they do the ground. Of Canadian birds, only hummingbirds and bushtits are smaller in size.

One distinguishing feature in these birds, a brilliant patch of orange, red, or yellow on the crown, is often difficult to see. Consequently kinglets are sometimes mistaken for other species, such as the small greenish-coloured flycatchers, some female warblers, and one of the vireos. The following accounts will help the novice to identify these birds readily.

Golden-crowned kinglet. Ruby-crowned kinglet.

GOLDEN-CROWNED KINGLET

Description

The golden-crowned kinglet measures 3¾ to 4 inches from bill to tail tip. It is a chunky little bird, plainly coloured in greenish-grey above, lighter below. The head is capped in red, bordered by a yellow band, which in turn is edged in black. The facial area between the black line and the eye is white, in the form of a distinct line. Females are similar in appearance but lack red, the cap being solid yellow edged in black. Young birds of the year may be without a coloured crown patch.

The highly coloured cap is sometimes difficult to observe in the field, especially when the birds are high in the trees. Nevertheless the species may be separated from those with which it may be confused by the combination of small size, the presence of two white wing bars, the white line above the eye, and the lack of a white eye ring.

Range and Variation

The A.O.U. Check-list (1957) lists this species' range as "from Kenai Peninsula, Kodiak Island, southeastern Alaska, British Columbia, Lake Athabaska, northern Manitoba, Ontario, southern Quebec and Newfoundland, south to southern California, Guate-

mala, and western North Carolina. In winter south to the Gulf coast of the United States and northern Florida ".

Two of the four recognized geographic races of golden-crowned kinglets occur in British Columbia. One is found throughout most wooded areas of the Province. The other infiltrates from the east in the Peace River district. These birds are similar in appearance in the field.

The golden-crowned kinglet is essentially a bird of the coniferous forest, where it usually frequents the higher canopies. However, it is often seen foraging with chickadees near ground level.

Voice

The song of the golden-crowned kinglet is not rated as highly as is that of the ruby-crowned, but it is nevertheless pleasing. Peterson (1961) describes it thus: "Call note, a high wiry 'See-see-see.' Song, a series of high thin notes (similar to call notes) ascending in pitch then dropping into a little chatter." Another writer quoted in Bent (1949) interprets the song as "Zee, zee, zee, zee, zee, why do you shilly-shally." Like most songbirds, the golden-crowned kinglet male sings only during the breeding season. Since the song is high pitched and of relatively little volume, it can be easily missed by those whose hearing is not acute.

Nesting

Most nests are situated on the underside and near the tip of large drooping branches of coniferous trees, from eye level to 50 feet up. It is likely, however, that these high-foraging birds may nest at greater heights, where human observation is next to impossible.

The nests are almost globular in shape, measure about 3½ to 4 inches in diameter and are narrowly open and flat at the top. They are firmly attached to the supporting twigs by spider web and fine plant fibres. The bulk of the nest is constructed of lichens and mosses, interwoven with fine grasses, coniferous needles, and spider web. The lining is of mammal hair or the feathers of other birds, sometimes interwoven with soft vegetable fibres. The eggs are very small and number from 5 to 11, usually 8 or 9. They

are creamy white, speckled in pale brown and sometimes in faint lavender. The brown markings vary from very fine dots to relatively large blotches and are usually more numerous around the larger end of the egg.

Apparently the period of incubation in unknown, but, as in the case of other tiny birds, it is likely to be about 12 days.

Food

This species is almost wholly insectivorous, feeding upon minute insects and insect larvæ. Larger insects are taken as well, some on the wing after the manner of a flycatcher. Species of insects injurious to coniferous trees are said to form a considerable part of the diet.

Migration

The golden-crowned kinglet is resident at lower levels throughout the Province during the winter months. There is an altitudinal migration in summer, with part of the population nesting at higher altitudes.

Ruby-crowned Kinglet

Description

The ruby-crowned kinglet is slightly larger than the golden-crowned. It measures 3¾ to 4½ inches from bill to tail tip. It has the typical chunky short-tailed appearance characteristic of birds in this small group. Like the golden-crowned, it is olive-grey above, lighter below, but differs in having a conspicuous broken white eye ring. The male has a concealed scarlet crown-patch which shows when the bird is excited and elevates the feathers on top of the head. In a few individuals the crown-patch is yellow. Two light-coloured wing bars are present, the lower one with a dark border on its lower side.

The female ruby-crowned kinglet is similar in appearance to the Hutton vireo, which is resident in the extreme south-western portion of the Province. Although the kinglet is smaller, the birds are much alike in colour and have the same general markings. Each has a broken white eye ring and two pale bars on the wings. The kinglet, however, is somewhat paler in colour and has a small straight bill, while the vireo has a heavier bill, which is slightly hooked. The dark border below the second wing bar of the kinglet is lacking in the Hutton vireo.

Kinglets are very active creatures with a characteristic "nervous" habit of twitching the wings. The Hutton vireo does not have this habit and is less active than either of the kinglets.

Young ruby-crowned kinglets resemble adult females.

Range and Variation

The ruby-crowned kinglet breeds across Canada north to the limit of trees and south through much of the United States. It migrates from the northern areas to winter from the northern and central United States south to Baja California, Mexico, Guatemala, the Gulf Coast of the United States, and Florida (A.O.U. Check-list, 1957). Over this range it has become differentiated into four subspecies. One of these is confined to the Guadalupe Islands off Baja California; the other three all occur in British Columbia. A northern race breeds from central interior British Columbia

northwards. A western race breeds all along the coast and on coastal islands from Prince William Sound, Alaska, south to southern Vancouver Island. The third race breeds in the south central portion of the Province. These three subspecies or geographic races are similar in appearance and may be recognized as ruby-crowned kinglets wherever seen.

The ruby-crowned kinglet is found in all woodland types of cover, such as edges of mature coniferous and deciduous forests, in slash, in early and late second growth, and in parkland groves. It tends to keep closer to the ground than does the golden-crowned kinglet.

Voice

The song is loud for such a small bird, and it is quite variable. Nevertheless it has a characteristic quality and a lilt or chant that makes it very easily identified. Some interpretations are " peedle-edle-edle-edle——wheedle wheedle " (Taverner, 1934); " tee tee tee, tew tew tew tew, ti-dadee, ti-dadee, ti-dadee " (Peterson, 1961); " eee-tee-tee-tee-tov-tov-tu-tu-ti-ta-tidaweet-tidaweet-tidaweet " (Saunders, in Bent, 1949). The lilt comes at the end of the song and seems to be the constant feature; this portion has been expressed also as " toute suite, toute suite, tout suite," " peabody, peabody, peabody," and " liberty, liberty, liberty."

The alarm call of this bird is a husky two-noted " phui-phuit," somewhat like that of some of the smaller thrushes.

Nesting

Although found in a variety of habitat types, the ruby-crowned kinglet seems to prefer a spruce-tree in which to build its nest. The nest is similar to that of the golden-crowned kinglet in being about 4 inches in diameter, globular, and somewhat flattened on top where the opening is situated. It is constructed mainly of mosses and lichens bound together by spider web and fine plant fibres. Bits of bark and other materials are often built into the main structure. Feathers of others birds and fur of mammals are usually used for lining.

Nests vary in location, some being hung at the distal end of a drooping branch, others midway or closer to the trunk of the tree.

Still others are not hung at all, but are built in among the cones and thick up-standing branches at the top of the tree. Nests vary in height from 15 to 100 feet above the ground and are usually very well concealed. Eggs number from 5 to 11 and are practically identical to those of the golden-crowned kinglet. They are tiny and creamy-coloured, variously spotted and blotched in brown. The period of incubation is probably 12 days, and young remain in the nest for an equal length of time. Young out of the nest resemble the adult female and show the white eye ring which separates them from young golden-crowned kinglets.

Food

Analyses of 294 ruby-crowned kinglet stomachs taken in California by Beal (Bent, 1949) revealed 94 per cent animal matter to 6 per cent vegetable. The animal matter was made up of spiders, lace bugs, leaf bugs, leafhoppers, aphids, flies, and a wide variety of other insects. Vegetable matter was mainly seeds and a small percentage of fruit.

The ruby-crowned kinglet is a very active bird, especially when feeding. It takes insects on the wing and while hovering. Usually it busily searches out every nook and cranny along a branch. Unlike the golden-crowned kinglet, this species is not gregarious and does not travel about in flocks.

Migration

The migration of the various subspecies of ruby-crowned kinglets is complex. Most of the birds leave the Province entirely to winter from the central United States southward. A few remain, however, to winter in the southern interior and in the southern coastal regions.

PIPITS

Pipits are slender grass-frequenting birds with thin bills and long straight hind claws. They are brownish in colour, streaked, and with the outer tail feathers white. They measure from 6 to 7 inches in total length. In North America there are four species of pipits, only one of which occurs in British Columbia.

Included in the same family as the pipits are the wagtails. As these do not occur in British Columbia, they are not treated here.

WATER PIPIT

Description

This bird was formerly known as the American or alpine pipit, which, in the opinion of many, are far better names than is "water" pipit. However, since this common name is accepted by the American Ornithologists' Union, we use it here for the sake of uniformity.

The water pipit measures 6 to 7 inches from bill tip to tail tip. It is brownish above, buff-coloured and lightly streaked below. The outer tail feathers are white and show clearly only when the bird is in flight. The slender bill and long hind claw, characteristic of the family, are apparent only when this bird is seen at close range. The pipit walks or runs but does not hop when on the ground, and this, coupled with a constant tail-bobbing, separates it from other birds with which it may be confused. In flight the bird undulates, shows the white outer tail feathers, and utters characteristic notes, all of which facilitate identification.

Range and Variation

The water pipit has an irregular circumpolar breeding distribution and a wide range over which it migrates and winters. Within

this range it has become differentiated into four subspecies or geographic races, one of which is known to occur in British Columbia. This race breeds throughout the high grasslands of British Columbia, south in the mountains to Oregon, and north through the Aleutian Islands to the western Arctic. It winters from southern British Columbia south to Baja California and western Mexico, occurring in Oregon, west central Nevada, and southern Utah. Casual in Texas, Louisiana, and Nueva Leon. (A.O.U. Check-list, 1957.)

Voice

The water pipit utters a sharp, thin one- or two-syllabled call variously described as "tsip-tsip, tspi-it" or just "tsip." (Bent, 1950). Peterson (1961) describes the call "a thin jeet or jee eet." The song of this bird, sometimes heard on spring migration as well as on the breeding-grounds, has also been variously described. It is usually uttered while the bird is in flight or dropping to earth in the manner of skylarks and longspurs. From descriptions appearing in several publications, it seems that a good deal of variation occurs in the rendition. Examples, "chivee, chivee, chivee, chivee, chivee, chivee," "ke-tsee, ke-tsee, ke-tsee, ke-tsee, tr-r-r-r-r-r-r, ke-tsee," etc., and is apparently of indefinite duration. The song was usually a repetition of syllables, see-see-see-see-see—, a peculiar resonant "kr" accompanying and barely preceding each "see," a quality impossible to describe adequately. Common to all interpretations of the pipit's song is the reference to repetition of thin syllables. On the breeding-grounds in British Columbia, the song, the flight, and other characteristics of the pipit are easily recognized.

Nesting

The nest is sunk into the ground in open country, often at the base of a grass tussock, rock or earth overhang, and it is usually well concealed. It is most often constructed entirely of fine grasses.

The eggs, which number 4 to 7, are dull white to grey in colour and are often heavily marked with brown spots and blotches.

Period of incubation is said to be similar to that of European species of pipit—13 or 14 days. After a similar period the young leave the nest and forage with the parents. Brooding of the eggs is done entirely by the female, but both parents assist in feeding the young. (Bent, 1950.)

In British Columbia, egg-laying begins in June, with fledgling young appearing in July.

Food

Accounts indicate that the pipit is largely insectivorous when such food is available, but takes readily to the seeds of a wide variety of plants at other times.

Forbush, in Bent (1950), found that more than 77 per cent of the pipits' food was made up of insects, over 64 per cent of which were injurious. In cotton-growing areas of the United States, the pipit is credited with destroying boll weevils in large numbers. On the Pribiloff Islands, fall migrating pipits are said to live largely on maggots, which abound in the areas where fur seals have been harvested.

Like most birds of this order, the pipit is opportunistic, feeding upon insects during the periods of abundance in spring and summer and upon small seeds and fruits in the fall.

Migration

All of the pipits are highly migratory, moving over long distances from breeding-grounds to wintering-quarters. They winter over a wide range, as exemplified by the race occurring in British Columbia.

WAXWINGS

Waxwings are sleek, crested birds, of such distinctive appearance that even the beginner has little difficulty in identifying them.

The family is represented in North America by two species, both of which occur in British Columbia.

The following accounts and illustrations will help the observer to identify waxwings readily wherever they are observed.

Bohemian waxwing. Cedar waxwing.

Bohemian Waxwing

Description

The Bohemian waxwing measures 7½ to 8¾ inches from bill to tail tip. It is a sleek, well-proportioned bird with a prominent crest of feathers on the head. The bill is black, fairly stout, and somewhat hooked. In general body colour this bird is smooth fawn-brown, almost mauve. There is a prominent yellow bar across the end of the tail, and the under tail coverts are rusty chestnut in colour. The tips of the secondaries are marked in white and most of the primaries with white or yellow, or both. The tips of the secondaries carry small, red wax-like adornments, for which the bird was named. A black band runs through the eye, and the throat is black. Altogether it is a natty-appearing bird with distinctive, easily recognized features.

Range and Variation

The Bohemian waxwing occurs from western Alaska and northern Mackenzie east to Manitoba and south to central Washington, northern Idaho, north-western Montana, and southern Alberta. In winter it may be found as far south as California and Arizona. It occurs as well in the northern parts of the Old World. Two

subspecies are recognized—the Old World form and that which occurs in North America. In British Columbia the Bohemian waxwing is a common bird in the northern sections and at higher altitudes during the summer months. In winter it is often seen at lower elevations in the southern parts of the Province.

In winter the Bohemian waxwing frequents a variety of habitats, seemingly at home in coniferous forests, deciduous growths, and in the hedgerows, shrubs, and trees around man's habitation. In summer it is usually associated with the coniferous cover which dominates higher altitudes in the northern regions where it nests.

Voice

The Bohemian waxwing has no prolonged song. It utters a rather weak, sibilant, buzzing call which may be expressed as " zer-r-r " or " zreee." When the birds are travelling in flocks, these notes, uttered by many individuals, produce a volume of sound that may be heard at some distance. A variety of low twittering " conversational " notes is also heard when the birds are feeding together.

Nesting

The nest is a conventional, bowl-shaped structure about 6 inches in diameter and 4 inches deep. The outside is made of twigs, lichens, and mosses; the inside is lined with finer grasses, feathers, and moss. The materials used inside and out vary with the locality in which the birds are nesting. For example, in muskeg, one of the favourite habitats, spruce twigs, " spanish-beard moss," sphagnum, and associated plant materials are used. In the pine forests where this bird nests as well, pine needles and twigs replace those of spruce.

Nests are usually located from 9 to 18 feet above the ground, but some have been recorded as low as 4 feet and as high as 25. The nest is usually placed on a limb near or against the trunk of the tree.

Eggs number from 4 to 6 and are pale blue in colour, marked with fine dark spots and fine lines. The period of incubation is probably about two weeks. Young are fed in the nest by the

parents for about 16 days. In juvenile plumage, the young resemble the adults but are somewhat streaked below. The bright markings, however, are present.

Food

The Bohemian waxwing is insectivorous in spring and early summer or until the small fruits begin to ripen. It then shows a marked preference for the latter. Very often the face of the bird is stained red, purple, or bluish, depending upon the kind of berries it has been feeding upon.

A wide variety of wild fruits is taken—raspberry, blueberry, chokecherry, wild crab, cranberry, barberry, dogwood, in fact any species available during the productive period. In winter, late hanging fruits, such as those of mountain ash, dogwood, rose, and arbutus, are important foods for the Bohemian waxwing.

Waxwings also feed upon sap flowing from trees and upon dried fruits placed on feeding-trays.

Migration

The migration of this species seems erratic, but in winter there are definite southerly movements and altitudinal migrations. In some years very large flocks numbering hundreds of birds are observed foraging at low altitudes in southern parts of the Province.

Cedar Waxwing

Description

The cedar waxwing measures 6½ to 8 inches from bill to tail tip. It is a natty, well-proportioned crested bird closely resembling the Bohemian waxwing. It differs in being smaller and in being yellowish rather than grey below. The yellow and white markings on the wings are lacking, and the under tail coverts are grey, not rusty. The tail bears a yellow terminal band, the eye has a black bar through it, the throat is black, and the secondaries are tipped with "wax." It is easily distinguished from all other birds, including the Bohemian waxwing, when the above points are considered.

Range and Variation

The cedar waxwing breeds across the continent north into the boreal forests and south to California, Arizona, and New Mexico. In British Columbia it is found throughout the Province during the summer months, preferring deciduous woodlands to a greater extent than does the Bohemian waxwing. In the fall it migrates from most areas of the Province to winter in more benign areas south to Cuba and South America. It winters farther north along both seaboards than it does in the interior of the continent. Small populations winter on the lower mainland, on Vancouver Island, and occasionally in the southern Okanagan.

So far no geographic variation has been recognized in this species. It apparently occurs in one form throughout the entire range.

Voice

Like the Bohemian waxwing, this species does not have a song. The call notes are somewhat like those of the larger species, but higher and sometimes slightly trilled.

Nesting

The cedar waxwing builds a nest composed of a variety of materials. It is a conventional bowl-shaped structure, about 6 inches in diameter, placed in the crotch of a tree sometimes well

out from the trunk. In the wilds, interwoven twigs, mosses, lichens, and grasses are used to form the outer bowl, and the inner lining is usually of fine grasses or other soft vegetable fibres. Around the habitation of man, string, cloth, wool, and other materials are often incorporated with the natural materials used.

Nests vary in height above the ground, most of them being about 15 or 20 feet up. However, nests have been recorded 6 to 50 feet above the ground. Eggs number from 3 to 5 (rarely 6) and are similar to those of the Bohemian waxwing, though smaller. They are pale blue, marked with fine dark spots and lines. The period of incubation is from 12 to 16 days. The young leave the nest about 18 days after hatching.

Young cedar waxwings are streaked; they lack the dark bar through the eye and are generally darker than the adult. However, all have the yellow terminal bar on the tail and many have red tippets on the secondaries. Sometimes there are red tippets on the tail feathers as well. Since no other bird has such markings, the cedar waxwing is very easily identified in all plumages.

Food

The food of the cedar waxwing is made up largely of small fruits. Early in the season, when such fruits are not available, insects are utilized. At this time also, the cedar waxwing can be very destructive, causing damage to flowering fruit by devouring the blossoms. In some areas, where the birds are plentiful, they do considerable damage to ripe cherry crops. Usually, however, wild fruit is the mainstay of the cedar waxwing.

Migration

Most of the cedar waxwings migrate out of the Province to spend the winter. However, a few remain on the lower mainland, on southern Vancouver Island, and occasionally in the southern Okanagan.

SHRIKES

These perching birds are noted for their hawk-like behaviour. In North America there are but two species—the northern shrike and the loggerhead shrike. In appearance and behaviour they are similar, being grey, black and white, robin-sized birds with hawk-like bills, hawk-like habits, but with the feet and other attributes of the perching birds.

Loggerhead shrike. Northern shrike.

Northern Shrike

Description

The northern shrike measures 9 to 10¾ inches from bill tip to tail tip. It has a stout chunky build and a relatively large head armed with a strong curved raptore-like bill. A broad black bar runs through each eye but does not join over the bill. The feet are typical perching-bird feet, similar to those of the robin (not like those of a hawk). Sexes are coloured alike, adults with grey upper parts and faintly barred white underparts. The wings are black with white markings at the base of the primaries. The tail is black, broadly marked in white along the edges and outer tips. Young of the year are less distinctly marked and browner than are adults.

Range and Variation

The northern shrike is well named, for it is indeed a bird of the higher latitudes, nesting north to the limit of trees around the world. In British Columbia it has been found nesting in the extreme northern reaches of the Province at Atlin and in the Haines Road area (Munro and Cowan, 1947). In winter it migrates southward, sometimes as far as northern California and the central United

States. It is seen in the southern reaches of British Columbia in small numbers during most winters.

Across North America the northern shrike occurs as two geographic races or subspecies—one eastern, one western. The western form breeds from Alaska east to northern Manitoba; it is replaced from Ontario eastward by the eastern form.

The northern shrike is a bird of semi-open country where groves, hedgerows, or spruce forest are broken by open fields, meadows, and muskegs.

Voice

Apart from call notes aptly expressed as "shek-shek," a grating "jaaeg," by Peterson (1961), I have found the northern shrike silent on the wintering-grounds in southern British Columbia. Others, however, have heard it sing a long succession of harsh notes intermingled with quite musical notes said to be reminiscent of the mocking bird. Bent (1951) cites examples of mimicry ascribed to this shrike. It seems then that quite a variety of sounds may be produced by this bird. Singing in most perching birds is most intensive on the breeding-grounds, and since this species nests far to the north, it is not surprising that relatively few people have heard its song. Bent, however, indicates that the song is often heard on the eastern wintering-grounds. Apparently the female is capable of singing as well as the male, an attribute not common in songbirds.

Nesting

According to Bent (1957), the northern shrike nests in spruce-trees from 7 to 12 feet above the ground. The nest is said to be a bulky affair up to 9 inches in diameter, constructed of "twigs, grass, feathers, rags, and deer hair." The lining is said to be of feathers, thickly interwoven to insulate the eggs. The eggs number 1 to 9, more often 4 to 6. They vary in colour from greyish-white to greenish-white, marked over the entire surface with brown spots underlaid with "spots and blotches of different pale shades of Quaker drab or lavender." Period of incubation, apparently unknown, is probably like that of the loggerhead shrike and similar-

sized perching birds—12 to 14 days. Nests containing eggs have been taken across northern Canada from May 20th to June 27th. Fully fledged young, collected at Atlin, British Columbia, by Swarth, were ready to leave the nest at the end of June. Another nest from the Haines Road area contained young on July 23rd.

Food

Insects, mice, and small birds make up the bulk of the northern shrike's food. According to the results of stomach analyses carried out from October to April in the eastern United States, 60 per cent of the diet was made up of mice and birds, the remaining 40 per cent of insects.

The shrike has a habit of impaling its victims on thorns of trees and shrubs and on barbed-wire fences. It also hangs them securely in crotches formed by small branches. This habit is thought by some to be food-storing behaviour. Others believe the perching foot, inadequate to hold prey while the shrike is feeding, is supplemented by impalement. At any rate, the shrike, often called "butcher bird," is an adept and aggressive predator, quite capable of taking mice and small birds with apparent ease. The prey is killed by a blow or blows from the bill, and carried by the bill, in most cases, to the place of consumption.

Migration

As previously stated, the northern shrike remains for the large part in northern areas, but small numbers migrate southward annually. Periodically, at four-year intervals according to reports in Bent (1950), large numbers migrate southward, particularly in the East.

Loggerhead Shrike

Description

The loggerhead shrike is slightly smaller than the northern shrike, measuring 8 to 10 inches in total length. It differs also in being white below with no vermiculations on the breast. In this species the black bar running through each eye meets over the bill. The two bars do not meet in the northern shrike. Otherwise the birds are quite similar, although from series of study skins that I have examined the loggerhead seems trimmer and more precisely marked than does the northern.

Range and Variation

There are very few records of the loggerhead shrike in British Columbia, and all are from southern parts of the Province. The Canadian border is in fact close to the northern limit of the species' range. South of this limit the species enjoys a wide distribution over North America, where it has become differentiated into nine subspecies, only one of which occurs in British Columbia. According to the A.O.U. Check-list (1957), the species winters chiefly southward from 45° north latitude.

Voice

The song of the loggerhead shrike is said to be musical by some, harsh and disjointed by others. Having not heard this bird perform, I can do no better than quote Peterson (1961), who says, "Song: half hearted notes and phrases; repeated mockingbird-like, but deliberate, with long pauses (queedle, queedle, over and over, or tsurp-see, tsurp-see). Note, shack, shack."

Nesting

According to Bent (1950), the loggerhead shrike builds a bulky nest at medium heights from the ground, usually between 8 and 15 feet. The nest is well built of roots, rootlets, twigs, string, cotton, and a wide variety of feathers, plant fibres, and hair. Both sexes help with nest-building, and both take part in incubation, which lasts from 10 to 12, possibly 14, days. Two broods are said to be raised annually.

Eggs number 4 to 6 and resemble those of the northern shrike, being dull white to grey, spotted in various shades of brown and with an indistinct underlay of lighter spots. Dates of nesting vary with latitude, those birds in the south nesting as early as March, those in the northern extremities of the range as late as June. In all areas, however, in regard to season, it is an early nester.

Young resemble the parents, but are duller with vermiculations on the breast. They differ from northern shrike young in being grey instead of brown.

Food

This species is apparently more insectivorous than the northern shrike, but it does have the same predacious habits and behaviour with small birds and mammals. Some authors " white-wash " the loggerhead, others condemn it. This seems to be the lot of any predator in its relationship with man. The shrikes, however, are interesting and unusual birds. That they successfully prey in part on other birds and mammals with the limited equipment of the percher is, to most ornithologists, an amazing thing and one of nature's marvels. It is right that they are protected by law.

Migration

The loggerhead shrike is migratory in the northern part of its range, sedentary to the south.

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